

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (currently amended): A method of assisting a wiring design of a wiring structure comprising the steps of:

regarding the wiring structure constituted by a plurality of pieces of line streak members as an elastic body ~~which has~~ having a circular section, ~~and in which the elastic body having~~ a plurality of beam elements coupled with each other, a linearity of which is maintained ~~are coupled with each other, a linearity of the plurality of beam elements being maintained;~~

applying information concerning a shape characteristic, a material characteristic and a constraining condition of the wiring structure as a predetermined condition to a finite element method;

calculating a predicted shape of ~~the~~ a displaced wiring structure such that the predetermined condition is satisfied;

further calculating a characteristic value with respect to vibration for the calculated predicted shape; and

outputting the calculated predicted shape and the calculated characteristic value.

2. (original): The method according to claim 1, wherein the characteristic value includes at least one of a natural frequency and a natural vibration mode.

3. (original): The method according to claim 1, wherein  
the wiring structure is a wire harness wired to a vehicle,  
the constraining condition is defined by coordinates of respective apexes of the plurality  
of beam elements and degrees of freedom at the respective apexes,  
the shape characteristic is defined by a sectional area and a length of the beam element of  
the wiring structure, and  
the material characteristic is defined by a moment of inertia, a polar moment of inertia, a  
density and a longitudinal modulus of elasticity and a transverse modulus of elasticity of the  
beam element.

4. (original): A method of assisting a wiring design of a wiring structure by calculating a  
predicted shape concerning a wiring structure constituted by a plurality of pieces of line streak  
members, the method comprising the steps of:

analyzing a characteristic value with respect to vibration for the predicted shape; and  
outputting a result of the analysis.

5. (currently amended): An apparatus of assisting a wiring design of a wiring structure  
in which the wiring structure constituted by a plurality of pieces of line streak members is  
regarded as an elastic body ~~which has~~ having a circular section, ~~the elastic body having~~ and in  
~~which~~ a plurality of beam elements coupled with each other, a linearity of the plurality of beams

~~being which is maintained are coupled with each other~~, and a shape of the wiring structure which satisfies a predetermined condition is predicted by utilizing a finite element method, the apparatus comprising:

a setting unit for setting information concerning a shape characteristic, a material characteristic and a constraining condition of the wiring structure as the predetermined condition;

a predicted shape calculating unit for calculating a predicted shape of ~~the~~ a displaced wiring structure such that the condition is satisfied by applying the predetermined condition to the finite element method;

a natural frequency calculating unit for calculating a natural frequency with respect to the predicted shape calculated by the predicted shape calculating unit; and

a first outputting unit for outputting the calculated predicted shape and the calculated natural frequency.

6. (original): The apparatus according to claim 5 further comprising:

a natural vibration mode calculating unit for calculating a natural vibration mode with respect to the predicted shape calculated by the predicted shape calculating unit; and

a second outputting unit for outputting the calculated predicted shape and the calculated natural vibration mode.

7. (currently amended): An apparatus of assisting a wiring design of a wiring structure in which the wiring structure constituted by a plurality of pieces of line streak members is

regarded as an elastic body ~~which has~~ having a circular section, ~~the elastic body having and in~~  
~~which~~ a plurality of beam elements coupled with each other, a linearity of the plurality of beam  
elements being ~~which is maintained are coupled with each other~~, and a shape of the wiring  
structure which satisfies a predetermined condition is predicted by utilizing a finite element  
method, the apparatus comprising:

a setting unit for setting information concerning a shape characteristic, a material  
characteristic and a constraining condition of the wiring structure as the predetermined condition;

a predicted shape calculating unit for calculating a predicted shape of ~~the~~ a displaced  
wiring structure such that the condition is satisfied by applying the predetermined condition to  
the finite element method;

a natural vibration mode calculating unit for calculating a natural vibration mode with  
respect to the predicted shape calculated by the predicted shape calculating unit; and

an outputting unit for outputting the calculated predicted shape and the calculated natural  
vibration mode.

8. (currently amended) A recording medium storing a program which causes a computer  
to function as an apparatus of assisting wiring design of a wiring structure in which the wiring  
structure constituted by a plurality of pieces of line streak members is regarded as an elastic body  
having ~~which has~~ a circular section, the elastic body having ~~and in which~~ a plurality of beam  
elements coupled with each other, a linearity of the plurality of beam elements ~~which is being~~  
~~maintained are coupled with each other~~, and a shape of the wiring structure which satisfies a

predetermined condition is predicted by utilizing a finite element method, the program causing the computer to functions as:

a setting unit for setting information concerning a shape characteristic, a material characteristic and a constraining condition of the wiring structure as the predetermined condition;

a predicted shape calculating unit for calculating a predicted shape of ~~the~~ a displaced wiring structure such that the condition is satisfied by applying the predetermined condition to the finite element method;

a natural frequency calculating unit for calculating a natural frequency with respect to the predicted shape calculated by the predicted shape calculating unit; and

an outputting unit for outputting the calculated predicted shape and the calculated natural frequency.